

Listing of Claims

1 – 79. (Canceled)

80. (Currently Amended) A method for stimulating an immune response in an animal, the immune response being directed toward a fusion protein, the method comprising:

- a) providing a DNA construct encoding a fusion protein selected from the group consisting DNA that encodes:
 - i) a fusion protein comprising a heat shock protein fused to ~~one~~ an epitope-containing segment, the epitope-containing segment comprising two or more identical epitopes,
 - ii) a fusion protein comprising a heat shock protein fused to two or more non-contiguous epitope-containing segments, each epitope-containing segment comprising one or more ~~identical or non-identical~~ epitopes identical to the epitopes of the other non-contiguous epitope-containing segments,
 - iii) a fusion protein comprising a heat shock protein fused to ~~one~~ an epitope-containing segment comprising two or more identical or non-identical epitopes, the epitope-containing segments being fused to the fusion sites selected ~~from~~ from the groups consisting of the N-terminus and an internal fusion site and,
 - iv) a fusion protein comprising a heat shock protein fused to ~~one~~ an epitope-containing segment comprising one or more identical or non-identical epitopes, the epitope-containing segment being fused to the N-terminus of the heat shock protein, wherein one or more epitopes are recognized by an antibody to be detected; and
- b) introducing the DNA construct of step a) into the cells of the animal under conditions appropriate for expression.

81 – 93. (Canceled).

94. (Currently Amended) A method for ~~neutralizing the biological function~~ reducing levels of a predetermined protein in an animal relative to base-line levels, comprising:

a) providing a DNA construct encoding a ubiquitin fusion protein selected from the group consisting of DNA that encodes;

- i) a ubiquitin fusion protein comprising ubiquitin fused to ~~one~~ an epitope-containing segment, the epitope-containing segment comprising two or more identical epitopes,
- ii) a ubiquitin fusion protein comprising ubiquitin fused to two or more non-contiguous epitope-containing segments, each epitope-containing segment comprising one or more ~~identical or non-identical~~ epitopes identical to the epitopes of the other non-contiguous epitope-containing segments,
- iii) a ubiquitin fusion protein comprising ubiquitin fused to ~~one~~ an epitope-containing segment comprising two or more identical or non-identical epitopes, the epitope-containing segments being fused to the ubiquitin at fusion sites selected ~~from~~ from the groups consisting of the N-terminus and an internal fusion site and,
- iv) a ubiquitin fusion protein comprising ubiquitin fused to ~~one~~ an epitope-containing segment comprising one or more identical or non-identical epitopes, the epitope-containing segment being fused to ubiquitin at the N-terminus of the ubiquitin protein, wherein one or more epitopes are recognized by an antibody to be detected and, which contain at least one epitope representing an epitope from the predetermined protein; and

b) introducing the DNA construct of step a) into the cells of an animal under conditions appropriate for the expression of the construct and stimulation of an immune response.

95. (Original) The method of claim 94 wherein the predetermined protein is a peptide hormone.

96. (Original) The method of claim 95 wherein the predetermined peptide hormone is a male-specific or female-specific peptide hormone.

97. (Original) The method of claim 96 wherein the predetermined peptide hormone is gonadotropin releasing hormone.

98. (Original) The method of claim 94 wherein the predetermined protein is tumor necrosis factor.
99. (Original) The method of claim 94 wherein the predetermined protein is a growth hormone protein.
100. (Original) The method of claim 94 wherein the fusion protein is conjugated to a non-ubiquitin carrier protein.
101. (Previously Presented) The method of Claim 80, wherein the heat shock protein is ubiquitin.